

REPORT

OF THE

MEDICAL OFFICER OF HEALTH

LIEUT.-GEN. A. PHELPS,

TO THE


23, AUGUSTUS ROAD.

GLOUCESTER

Urban Sanitary Authority

FOR 1892.





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REPORT.

*To the Chairman and Members of the Sanitary Committee
of the Gloucester Urban Sanitary Authority.*

MR. CHAIRMAN AND GENTLEMEN—

I have pleasure in presenting to you my Annual Report as Medical Officer of Health, for the year 1892, and in doing so I may for a moment be permitted to give a short description of the geological situation, so far as it is likely to affect the health of the city.

Gloucester is marked on the ordnance map as being built on the lower lias, and those who are acquainted with this formation would assume that the subsoil and underlying rock consisted of blue clay.

The ordnance surveyors, however, rarely notice superficial deposits, yet in the case of Gloucester these are of the utmost importance, frequently extending to a depth of ten or fifteen feet. These superficial deposits consist of sand, gravel, river loam and patches of boulder clay.

Within the walls of the old city will be found soil and organic accumulation for a depth of six to eight feet, and for this reason wells sunk within this area must be considered polluted.

On the west side of the city, extending from St. Nicholas church to the river, will be found varying depths of river loam containing usually forty to fifty per cent of clay.

The northern position, including Wotton, is covered with gravel and loam, chiefly of oolitic origin.

In the south and west the clays are covered with sand and gravel, varying in depth between six and ten feet. These usually run in channels and appear to have been brought from the quartzitic rocks of north Worcestershire by glaciers, as the sands are sub-angular and have the same composition as the quartzite of the Lickey Hills.

The importance of these deposits cannot be over-rated, and no doubt the health of the city is favourably influenced by the numerous deposits of sand and gravel.

SOURCES OF WATER SUPPLY.

The only source, originally, was from reservoirs at the side of Robinswood Hill, about two miles from the city and 150 feet above sea level. A great deal of the supply was also obtained from wells sunk in the soil over the blue clay, and, as we have seen, liable to very serious contamination. In 1855 the waterworks at Witcombe were commenced, about five miles from the city, and at an elevation of 300 feet above sea level. They were enlarged in 1868, and now consist of three reservoirs holding about 119 million gallons, or together with Robinswood Hill, about a storage capacity of 130 million gallons.

Robinswood Hill is an isolated outlier of the Cotswold range, having a slight capping of inferior oolite and mitford sand, forming a gathering ground for the springs thrown out by the lias clay below. These springs are collected by conduits running round the contour lines of the hill and discharged into the reservoirs.

At Witcombe there is a watershed area of 1,500 acres,

formed by an escarpment of the Cotswold range, consisting of inferior oolite, mitford sands, upper lias clay, marlstone and lower lias clay in descending order, the water collected in this area falls into No. 1 or upper pool by eight streams, which pass through settling tanks and rough filter beds before entering the reservoir, and the water is decanted from No. 1 into the other two pools, which are two feet and four feet six inches below it, respectively, when full.

Of late years several small matters have been done to improve the quality of the water, such as cleaning and cementing the lower pool at Robinswood Hill, and removing the mud at No. 1 pool at Witcombe.

I give here in tabular form an analysis of the water both at Robinswood Hill and Witcombe, and while the latter is at present in a fairly good condition, the former is, I fear, not so pure. The large quantity of albuminoid ammonia present would suggest some contamination.

A. Analysis of the City Water. (x 52)

B. " " Robinswood Hill Reservoir Water. (x 53)

	Parts per 100,000	
	A	B
Total solids	26	30
Chlorine (combined)	1.7	2
Mineral ammonia	Nil	Nil
Albuminoid ammonia ... ..	.015	.03
Oxygen required for combustion of organic matter	.132	.155
Total hardness (Clarke's degrees)	11.5	11.5
Permanent hardness do.	3.0	3.2
Temporary do. do.	8.5	8.3

The water from Witcombe is fairly pure, and the organic matter is rather lower than usual; sample A.

Sample B certainly contains more organic matter than is allowable in a drinking water.

I forgot to mention that about 180 houses in the south-west, or Bristol Road district, are supplied with water

from a pool at Hempstead. This water is derived from streams taking their origin from above Brookthorpe, about two or three miles from the city, and passing through pasture meadows to Hempstead, when it is pumped into a reservoir, passed through filter beds and sent on to the city.

The daily average consumption of water in the city is about 705,178 gallons (excluding that from Hempstead), which would give about 17.75 gallons per head per day, or nearly 18 gallons per head if Hempstead supply is considered.

The following statistics regarding sanitary work done show that nearly four hundred houses were supplied with flushing boxes during the year, but there are still over six hundred unprovided with flush boxes but with a proper water supply. I am sorry that there are still nearly four hundred houses using well water, though, as will be seen below, the number is now being rapidly reduced.

Over sixty ventilating shafts have been erected during the year, which will be a material aid to the ventilation of the sewer manholes.

CITY OF GLOUCESTER SANITARY STATISTICS, 1892

	PLANS PASSED				BUILT
Houses	196	...	...	154
Public Buildings	...	1	...	...	1
Offices	1	...	...	1
Business Premises	...	7	...	...	7
Alterations and Additions	..	25	...	..	22
Re-building Premises	...	2	...	...	0
Stable	1	...	...	1
Bay Windows	1	...	...	1
Streets	8	...	...	6
Football Pavilion	...	1	...	...	1
Totals	243	...	...	194

TWO PLANS REJECTED,

WATER SUPPLY.

Houses supplied with City Water and provided with Flushing Boxes to w.c.'s at end of 1891	...	...	...	6885
Houses connected with City Water and provided with Flushing Boxes to w.c.'s during 1892	...	...	...	277
Flushing Boxes fixed at Houses where City Water was already laid on	...	...	...	100
Total number of Houses with Flushing Boxes	...	...	...	7262
Houses still without Flushing Boxes, but supplied with City Water	...	...	...	647
Total Number of Houses with City Water	...	...	...	7909
Houses supplied with City Water and provided with Flushing Boxes at end of 1892	...	...	...	7262
Houses with City Water, without Flushing Boxes				647
Houses supplied with Pump Water	...	...	...	387
✓ Houses supplied with Lysons' Water	...	...	...	187
				<hr/> 1221
Total number of Houses in City	...	...	...	8483

VENTILATING SHAFTS.

✓ Number of Shafts erected to end of 1891	...	...	...	688
Number of Shafts erected in 1892	...	...	...	62
Total	...	...	...	<hr/>750

During the year two very important departures from established custom took place. One was the appointing of three additional Sanitary Inspectors for the purpose of making a complete house to house inspection, with the object of remedying any Sanitary defects; the other that of enlarging the Infectious Diseases Hospital at Stroud Road.

With regard to the house to house inspection, I regret to say that a very unsatisfactory state of things was found to exist; houses without proper water supply, closets without flush boxes, indoor soil pipes (often leaking), house drains (very imperfect) going under the

houses, drains opening into houses with only the protection of such water seal as exists in the ordinary useless traps, and closets not ventilated. I have the satisfaction to report that in the six months up to the end of the year, we have had remedied nearly six hundred of these defects, and the work is now going on at the rate one hundred remedied each month.

As we are in great danger of a visit from Cholera during the coming summer, this work cannot be too rigorously carried out. Cholera is a comparatively harmless disease if all Sanitary precautions have been studiously observed, but when these have been neglected no scourge of the human race is so terrible or so sudden in its action. All imperfect drainage, all filth soddened areas, all improper supplies of drinking water, and in fact, anything in the nature of uncleanness are sure to give this disease a fatal hold upon the place where such exist.

This of course applies to all diseases, particularly infectious diseases, but it applies with much greater intensity in the case of Cholera. I therefore hope that no reduction will be made in the staff of Inspectors till this very important work has been most thoroughly done.

The Infectious Diseases Hospital originally contained four beds in each ward, or sixteen in all. This was a most inadequate number, and an epidemic of Scarlet Fever having broken out in April last, your Committee felt that the Hospital ought to be enlarged. Messrs. Humphreys, of London, were therefore asked to erect two additional blocks of wards: each block contains two wards with accommodation for eight beds each, or sixteen per block. There are also kitchen, pantry, nurses' room,

closets and bath-rooms to each ward. Altogether we have accommodation for forty-eight or fifty cases.

Although the Hospital would be called a temporary building, it is well adapted to its purpose, and the wards are well ventilated, well lighted, well warmed, and with plenty of cubical space to each one. There are also the usual outdoor offices, as laundry, mortuary, &c.

There are, of course, the usual defects that belong to a temporary structure, and there might be some little difficulty in thoroughly disinfecting a ward so as to be available for a different disease to the one just treated there. We can of course obviate that difficulty by reserving certain wards or blocks for certain diseases.

I should like to see another block further removed from the others for Small Pox, for there is no doubt that this disease is conveyed a considerable distance by the intervening air, and if an epidemic of it occurred, we should have some difficulty. ||

As I pointed out in a special report, the full usefulness of such Hospitals is not gained when they are hurriedly erected during the progress of an epidemic, therefore this Hospital will, in future, be more useful than heretofore on that account. The fact that one hundred and fifty-seven out of all the three hundred and fifty-two cases of Scarlet Fever notified during the year, were isolated and treated at the Hospital speaks for itself, and it must be remembered that the Hospital was not in use more than six months out of the twelve, as it was not finished till July. 70 11. 26

I would urge that the fencing should be put back so that at least forty feet intervene between any part of the Hospital and the fence.

That isolation is of great service in infectious disease has been fully proved over and over again during the year. In most cases of removal when the person first attacked was gone and the house disinfected, no other case occurred in it, though there were, in many cases, large families.

The usefulness of the Hospital is recognised by the community, and in most cases they are eager for admission.

One important question still remains to be definitely settled, that of charges for Hospital treatment; and your Committee has exercised a wise discretion in relieving the poorer classes of all charge, indeed I would recommend that almost all cases be treated free, for in this way alone can the full benefit of isolation be obtained.

I very much regret that a proper steam disinfecting apparatus has not yet been obtained. If we are going to get the full value from recent legislative enactments in connection with public health, we must be able thoroughly to disinfect, and if we are to destroy all infected articles in the case of epidemics, a much heavier account will have to be met than that incurred in purchasing such an apparatus. Indeed, I shudder to contemplate our condition should a severe epidemic of Small Pox come upon us without the means of prompt disinfection.

I have over and over again, in special reports, urged this matter upon the Authority, and trust soon to be armed with this necessary apparatus. At the present time we could not even *destroy* bedding and other articles, as we have not a destructor with which to do so, and have had great difficulty in this respect with the few cases we have already had to deal with.

I may now refer to special diseases and first as regards

SMALL POX.

There has not been a case of Small Pox during the year, but there are indications that we will not long be without it, as it is spreading all around us, and most districts in England are more or less affected. We are in a condition of special danger, as, for the past few years no vaccination has been enforced in the district, and the greater number of children in the place are unvaccinated, indeed, during the past year only about sixteen cases have been vaccinated in a community of about forty thousand.

SCARLET FEVER.

This disease has been epidemic here during the year, three hundred and sixty cases were notified from the beginning of April. It first of all seemed to affect small children, and that among the lower classes, then it spread to the children of the higher classes, and, last of all, grown up people in different grades of life took the disease.

I regret that the people at large are so indifferent to the necessity of guarding against the spread of infection. Each person looks at the matter only from his own standpoint, and not with the thought of checking the spread of disease. I therefore had a special pamphlet printed and sent to every house, warning the people of this danger, and giving them full instructions how to act, also warning them that proceedings would be taken against anyone infringing the sanitary law. And we have visited every house where infectious disease was notified, and where sanitary defects were found they were remedied. We have carefully seen to the disinfection of all houses after the recovery of the patients.

Early in the epidemic I advised the Authority to close the schools in connection with which this disease seemed to be spreading, and this was extended to any other schools found to be similarly affected, but your Committee thought it better to open the schools again, and try the effect of carefully excluding all children from infected houses. The result has been rather uncertain, the disease still continues and will apparently continue till most of the susceptible children in the city have had it. I strongly advised the closing of *all* the schools, but that was not carried out, and therefore one remains in doubt whether or not it would have had the desired result.

There is one satisfactory element in the midst of this unfortunate visitation, namely, that the deaths have been very few, only nine cases proving fatal. This is almost incredible, but is a correct statement.

One great difficulty presents itself in an epidemic of this kind, that the parents of children in the middle and upper classes will not allow them to be removed at once to the Hospital, so that at the commencement the disease could be stamped out by isolation, and until cases can be compulsorily removed, I fear this will materially interfere with the stopping of epidemics at their commencement.

DIPHTHERIA.

This disease has prevailed here now for over two years and still continues, though the number of cases is gradually diminishing. There were one hundred and thirty six cases notified during the year, but none of them removed to the Hospital, the reason for this is that the disease had raged for eighteen months before the Hospital was enlarged, and I felt that it would be useless

to attempt to cope with it as our Hospital was fully occupied with Scarlet Fever, and little or no good could be expected on account of the previous long-continuance of the disease. There was a mortality of thirty-three from Diphtheria during the year, which cannot be considered excessive when the intractable nature of the complaint is taken into account. Here, as in the case of Scarlet Fever, we have attempted to mitigate it by house visitation and careful disinfection, always considering it highly infectious and contagious.

I think little doubt can be entertained as to the connection between this disease and unhealthy surroundings. Damp walls, damp cellars, defective house drains, imperfect ventilation and the like are generally found where it is prevalent, and during the year just past we found most of these conditions where Diphtheria made anything of a stand.

MEASLES.

This is not a notifiable disease in this District. During the latter part of the year Measles became prevalent, and appears to be of rather a severe type.

There have been only three cases of death recorded from it since its advent.

It is a question whether or not Measles ought to be included in the notifiable list. I fear that with our limited Hospital accommodation this would not be of much use. Again, the public mind is more inclined in this than almost any complaint to treat the matter lightly and not attempt to guard against its spread, so that notification would not be of much service. The disease is very rapid in spreading itself, and would become epidemic before much could be done to prevent

it. At the same time I consider that *all* infectious diseases ought to be notified, for the purpose of giving the Authorities information if for nothing else.

ENTERIC FEVER.

Thirteen cases of this disease were notified during the year, and two deaths. It is right, however, to say that a third death occurred outside the city, but the disease was contracted in the city, so that it ought to be included in the fatal cases. This is a very satisfactory state of things : it suggests, at all events, that water supply is not in a very bad state, and few Districts of this size would furnish a better record as regards Typhoid Fever.

ERYSIPELAS.

Twenty-four cases of Erysipelas have been notified, with one death. The type is therefore very mild.

There were three cases of Puerperal Fever, all fatal.

PHTHISIS.

This disease is not notifiable, but I think it is a question to be seriously discussed whether it ought not to be included in the list. It is evidently contagious, and is likely to spread because people connected with the patient are not aware of this, or they would not believe it if told it was so. Notification would be useful, inasmuch as when a stir was made about the precautions necessary in every case, the friends would begin to think that it was more dangerous to be with the patient than they at first supposed.

Sixty-two deaths occurred from this disease during the year as compared with 51, 1891; 66, 1890; 53, 1889; 46, 1888; 53, 1887. I have little doubt but that the

gradual extension of better houses, and the general spreading out of the population, as it were, will have a beneficial effect in preventing the spread of this disease. This "spreading out" has been most remarkable during the past ten years; for, with only an increase of something like between three and four thousand in the population, the number of inhabited houses of a good class is much more than proportionate to this.

MEMBRANEOUS CROUP.

There were six deaths from Membraneous Croup during the year, only two of which have been notified, so that I fear there has not been perfect attention to the notification of this disease, and I shall see that the delinquents are more careful in future.

WHOOPING COUGH.

There were but three deaths from this disease during the year, and I am convinced that very few cases occurred.

VITAL AND MORTAL STATISTICS.

The Urban District of Gloucester, since the re-arrangement some years ago, has an acreage of fourteen hundred and forty-two acres, and I estimate the population at the end of December, 1892, as thirty-nine thousand seven hundred and twenty-two, thus giving a density of population on the whole area of 27.5 persons per acre. This seems small, but is accounted for by the fact that there are some portions within the District where large tracts of land are unbuilt upon.

I have endeavoured this year to divide the city into four sub-registration districts, and after taking a great

deal of trouble I have been able to do so, but unfortunately I am not able to give death rates for each district, as I discovered that the registrars have not given me, in all cases, the previous destinations of persons belonging to the various districts, who died at the several Institutions, such as the Infirmary, Workhouse, Asylum, &c. This is most unfortunate, as it would be most useful in localising disease and enabling me to ascertain some probable cause of disease in different parts of the district. I am, however, able to give the density of the population per acre in the different divisions.

I have divided the city into the four sub-registration districts of Kingsholm, St. Nicholas, St. John the Baptist and South Hamlet. Kingsholm has an acreage of 265, this with an estimated population of 2632, would give 9.9 persons to each acre. Saint Nicholas with 351 acres, and a population of 7423, would give 21.1 persons per acre. Saint John the Baptist with 126 acres, and a population of 7993, would give 63.4 persons per acre; and South Hamlet with 700 acres, and a population of 21,673, would give a density of 30.9 persons per acre.

The four districts are clearly shown upon the map at the end of this report, so as to show at a glance the parts of the city thickly inhabited or the contrary. The district of St. John the Baptist being in the very centre of the city, of course shows much the largest number per acre.

I have made such arrangements with the registrars as will, I think, enable me in next year's report to give also the death-rate in each district, and, as far as possible,

the distribution of infectious disease. A table of the four divisions is here given.

REGISTRATION OF SUB-DISTRICTS.

ACREAGE, POPULATION AND NUMBER OF PERSONS
TO AN ACRE.

	ACRES.	POPULATION.	NUMBER TO EACH ACRE.
St. John the Baptist ...	126	7993	63.4
St. Nicholas	351	7423	21.1
Kingsholm	265	2632	9.9
South Hamlet	700	21673	30.9
	1442	39721	

St. John the Baptist comprises the Parishes of St. John's, St. Aldate, St. Michael, St. Mary-de-Crypt, St. Owen, and St. Mary-de-Grace.

St. Nicholas comprises the Parishes of St. Nicholas, St. Mary-de-Lode, St. Catherine, Holy Trinity, and Pool Meadow.

Kingsholm comprises the Parish of Wotton St. Mary.

South Hamlet comprises the Parishes of South Hamlet, Littleworth, and Barton St. Mary.

BIRTHS.

The births during the year amount to twelve hundred and fifty-five, against twelve hundred and eighty-four in 1891, twelve hundred and twenty-eight in 1890, and twelve hundred and fifty in 1889. Of the 1255 in the past year, 609 were males, and 646 females. The birth rate is therefore 31.59.

DEATHS.

The deaths registered during the year number seven hundred and sixteen, this includes nine deaths occurring out of the district, but of people belonging to the city.

The death rate is therefore 18·02 per thousand. As compared with a death rate of 20·04 in the preceding year this is very satisfactory. I think the explanation is that only one hundred and ten deaths occurred from Bronchitis, Pneumonia and Pleurisy, while about two hundred were due to these diseases in the year before; and to the small infant mortality this year.

INFANT MORTALITY.

One hundred and fifty-one infants died under one year of age during the year, as compared with 215 the preceding year. The infant mortality then will be, 125·0 per thousand now, as compared with over 160 per thousand in the year before.

This is a low infant mortality as compared with other cities of the same class.

ZYMOTIC DEATH-RATE.

The Zymotic death-rate for the year is 1·96, as compared with 2·28 in the previous year. This is low, considering that we have passed through two epidemics, one of Scarlet Fever and one of Diphtheria.

INSPECTION OF BAKE-HOUSES.

All bake-houses have been inspected, with the result that many defects have been discovered: these are being remedied as quickly as the owners can be induced to do it; indeed a great part of this is remedied under the superintendence of the Assistant Inspectors specially appointed,

SLAUGHTER-HOUSES.

All slaughter-houses have been regularly inspected and any nuisances abated. Recently slaughter-houses have only had their licenses renewed after inspection.

MILKSHOPS.

These have been regularly visited and about fifty samples of milk taken for analysis from them and from other vendors of milk. Some samples were of very doubtful quality, and the sellers were only saved from prosecution because certain good excuses were given which were deemed satisfactory.

OFFENSIVE TRADES.

These were inspected and all nuisances arising from them abated; and where certain alterations had to be made the owners were fully cautioned as to the avoidance of nuisance.

LODGING-HOUSES.

All common lodging-houses have been periodically inspected, as well for the purpose of preventing overcrowding, abatement of nuisances, and with a view to immediately dealing with any case of infectious disease that might occur.

These are regularly licensed, and the numbers allowed in the house fixed. The number of persons allowed in each room, with due regard to the cubic space, is marked on the door, and care is taken that no greater number is allowed,

HOUSES LET IN LODGINGS AND COURTS.

These have been regularly inspected, and any defects remedied, any nuisance abated, and houses in such a condition as to be unfit have been promptly attended to.

FOOD AND DRUGS ACT.

Over one hundred samples of butter have been taken for analysis—partly with the aid of the Dairy Produce Defence Association—and in twenty cases found defective a second sample was produced, with the result that five prosecutions were instituted, and fines varying from five to fifteen pounds, with costs, imposed. We are still continuing this work with increased vigilance, and hope to take samples of all articles of food during the present year.

One prosecution was instituted under the Contagious Diseases Notification Act for neglect to notify Scarlet Fever where no medical man attended, and the person pleaded guilty.

MEAT INSPECTION, ETC.

We have made regular inspection of shops for the sale of meat, both those of ordinary butchers and those for sale of imported meat, and have found no fault to record. The Market Inspector and myself have regularly examined all meat offered for sale, but the quality is now good. Fish shops have also been inspected regularly.

METEOROLOGICAL OBSERVATIONS.

I very much regret that I am unable to supply more than the following observations. There is no proper station, supplied with the proper instruments for getting barometrical readings, humidity of air, or velocity or

direction of wind. Should such be procurable I will, in future Reports, give complete observations.

In the following table I give Rainfall, properly corrected, and within the city, and Thermometrical observations, also within the city.

RAINFALL AT LLANTHONY LOCK IN THE YEAR 1892.

	Inches.	Highest.	Lowest.
January	0.82	18th 0.23	21st 0.02
February	1.00	20th 0.33	25th 0.01
March	0.66	15th 0.33	21st 0.01
April	0.91	18th 0.15	28th 0.01
May	1.07	27th 0.68	18th 0.01
June	1.65	28th 0.47	20th 0.01
July	1.84	12th 0.85	13th 0.01
August	2.36	27th 0.69	16th 0.05
September	2.91	27th 0.47	23rd 0.03
October	1.54	13th 0.38	16th 0.01
November	1.88	4th 0.53	18th 0.02
December	0.71	1st 0.30	11th 0.01

SUMMARY OF TEMPERATURE
AT BARTON STREET, GLOUCESTER, 1892.

	Maximum.	Minimum.	Mean of Maximum, or Day Temp.	Mean of Minimum, or Night Temp.	Mean of Month.
	Fah.	Fah.	Fah.	Fah.	Fah.
January	56	20	43.00	32.80	37.90
February	56	15	48.42	34.82	41.62
March	66	22	47.74	29.93	38.83
April	79	24	61.90	35.12	48.51
May	79	30	65.35	46.35	55.85
June	85	35	68.96	48.70	58.83
July	84	45	69.83	51.80	60.81
August	80	41	64.54	51.67	58.05
September	72	30	64.80	41.66	53.23
October	60	27	54.25	37.58	45.91
November	59	27	51.33	39.40	45.36
December	55	13	41.41	30.54	35.97
Means for the year	...	...	56.79	40.03	48.40

CANAL BOATS.

There were two hundred and two boats visited during the year. Twenty-eight boats registered. No infectious disease found, and no infringement of the Canal Boats Act was observed. Mr. Brydon, Chief Inspector, has examined our records and has expressed himself satisfied.

In conclusion I have to thank Mr. Blakeway, Mr. Read, Mr. Embrey and others for valuable assistance.

I am, Mr. Chairman and Gentlemen,

Yours faithfully,

JOHN CAMPBELL, M.D.

Medical Officer of Health.

TABLES
OF
BIRTHS, SICKNESS
AND
DEATHS.

TABLE OF BIRTHS

REGISTERED IN THE URBAN SANITARY DISTRICT
OF GLOUCESTER IN 1892.

	MALES	FEMALES	
January 1st to March 31st ...	150	162	
April 1st to June 30th ...	174	161	
July 1st to Sept. 30th ...	154	158	
October 1st to Dec. 31st ...	131	165	
	609	646	Total 1255

TABLE OF DEATHS

*From some forms of Disease in the District, for the last
ten years ;*

*Also Number of Births, and Deaths from all Diseases
for same period*

	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892
Small Pox ...	—	—	—	1	—	—	—	—	—	—
Scarlet Fever ...	36	5	3	1	7	1	—	—	—	9
Whooping Cough ...	7	13	23	8	2	10	26	2	18	3
Measles ...	5	22	6	—	5	57	2	23	16	3
Enteric Fever...	9	8	2	8	7	8	8	4	5	3
Erysipelas ...	2	4	1	—	3	1	3	2	2	1
Puerperal Fever ...	3	3	3	—	4	1	0	1	—	3
Diarrhoea ...	26	22	11	24	12	10	14	19	11	11
Diphtheria ...	1	—	4	—	2	2	2	10	23	33
Pyæmia ...	2	—	—	—	—	2	—	—	2	—
Croup ...	2	10	12	4	3	3	1	4	3	6
Bronchitis, &c. ...	108	88	133	79	91	71	86	130	184	110
Births ...	1262	1231	1231	1304	1171	1197	1250	1228	1284	1255
Deaths from all causes	668	675	699	605	568	637	650	676	807	716

(A)

TABLE C

During the year 1892, in the Urban Sanitary District of C

NAMES AND LOCALITIES adopted for the purpose of these Statistics; public institutions being shown as separate localities. <i>(Columns for Population and Births are in Table B.)</i> (a)	MORTALITY FROM ALL CAUSES AT SUBJOINED AGES.								MORTALITY FROM SPECIFIC CAUSES			
	At all ages	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and up- wards			Smallpox	Scarlatina	Diphtheria
(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	1	2	3		
								Under 5	...	...	...
								5 upwards	...	...	...
General District...	611	146	77	43	21	147	177	Under 5	...	4	18	
								5 upwards	...	5	15	
Infirmary	34	1	6	1	3	20	3	Under 5	...	...	...
								5 upwards	...	...	...
Workhouse	47	4	...	...	...	12	31	Under 5	...	...	...
								5 upwards	...	...	...
Asylum	15	...	...	...	1	10	4	Under 5	...	...	...
								5 upwards	...	...	...
TOTALS	707	151	83	44	25	189	215	Under 5	...	4	18	
								5 upwards	..	5	15	
Deaths occurring outside the district among persons belonging thereto	9	2	2	5	...	...	...	Under 5	...	...	...
								5 upwards	...	...	...
Deaths occurring within the district among persons not belonging thereto	107	...	...	1	8	63	35	Under 5	...	...	...
								5 upwards	...	...	...

DEATHS

ter, classified according to Diseases, Ages, and Localities.

OM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.

FEVERS.					Cholera	Erysipelas	Measles	Whooping Cough	Diarrhoea and Dysentery	Rheumatic Fever	Ague	Phthisis	Bronchitis, Pneumonia, and Pleurisy	Heart Disease	Injuries	All other Diseases	TOTAL
Typhus	Enteric or Typhoid	Continued	Relapsing	Puerperal													
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
..
..	...	...	...	...	...	...	...	...	...	3	.	...	...	...	...	...	...
..	...	...	...	...	...	...	3	3	9	...	...	1	45	1	3	133	224
..	1	...	...	3	...	1	..	...	1	3	...	53	55	30	12	207	387
..	...	...	...	...	.	...	...	...	...	...	...	...	..	..	3	2	6
..	1	...	...	...	...	...	...	...	...	...	..	4	4	1	5	13	28
..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4
..	...	...	...	..	...	...	...	...	1	...	...	3	5	5	...	29	43
..
..	...	...	...	..	...	...	...	...	...	...	...	1	1	...	...	13	15
..	...	...	...	...	...	...	3	3	9	...	.	1	45	1	6	139	234
..	2	...	...	3	...	1	...	...	2	3	...	61	65	36	17	262	473
..	...	.	..	..	...	...	...	...	...	...	...	...	...	...	...	4	4
..	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	5
..
..	...	...	..	.	...	...	...	...	...	..	..	9	27	7	11	53	107

PORT SANITARY AUTHORITY.

MR. CHAIRMAN AND GENTLEMEN,

I have pleasure in presenting my Annual Report as Port Medical Officer of Health.

This district extends from the City of Gloucester to Sharpness, including the Gloucester and Berkeley Canal, sixteen miles long, and also the Docks at Gloucester and Sharpness. In future this will probably be extended to include the mid channel and south coast, as far as the Bristol district at one end and the Severn Bridge at the other. The north side of the coast line is not included, that being, I believe, part of the Chepstow district, which has permanent jurisdiction over that side. The vessels coming within this latter would be quite immaterial as far as the proper working of the Cholera orders are concerned, as only small coasting craft would have to be dealt with.

Our extended water-way would also include the anchorage of Northwick Oaze for the purpose of a temporary quarantine station if need be. But the quarantine anchorage we would use would be Kingroad. This, with the consent of the Bristol Authority and the Local Government Board, both of which will, I believe, give such consent.

One very great advantage we possess is this: that arrangements have been made whereby the Bristol Authority will examine all Gloucester bound ships coming foreign and will remove any cases of Cholera from on board ship, treat such cases and disinfect the vessels. The importance of this cannot be over-estimated, as it will form our "first line of defence."

At the present time there are two special Cholera Hospitals, one at Sharpness and the other at Gloucester, each containing four beds ; and the number of beds might be increased if necessary. Any infectious cases found on board ship at Sharpness or Gloucester would be, with the exception of Cholera, removed to the Infectious Diseases Hospital in Stroud Road, Gloucester, and not treated at the Cholera Hospitals.

There is at present only one Sanitary Inspector who is located at Sharpness, but it is intended at once to appoint another, so that *all* vessels coming into the waters under the control of this Authority should be properly inspected.

During the past year the duties of the Inspector and myself have been exceptionally heavy, because of the very great danger of importing Cholera from Germany, France and Russia. One feels that the strength of our chain depends on the strength of its weakest link, and if this disease breaks through that, the whole country might be at its mercy. Here arises the great reason for putting our homes, whether in town or country, into perfect sanitary order, as should Cholera unfortunately break through our coast defences, it could not find a congenial soil upon which to extend itself. This is a disease of filth and imperfect sanitation, and so long as we avoid these highways for its spread, so long may we feel fairly safe.

This winter I attended, in London, a Conference of Port Medical Officers of Health, and also one of Port Sanitary Authorities of the United Kingdom, and their recommendations include the systematic inspection of *all* vessels coming to a district ; and also, that inasmuch as the precautions taken by Port Districts are precautions for the whole kingdom, the Imperial Exchequer ought to provide the expenses connected therewith. This seems reasonable, and I hope that we may be so fortunate as to get such aid.

Fortunately no case of Cholera was actually brought here, and no case occurred in the Port, though several ships had Cholera on board during the voyage here. The steamship "Penwith," from

Yeisk, had one death on the voyage and two sailors affected besides, but by the time she arrived here all were well. The "Hero," from Hamburg, had a sailor removed on leaving, who was taken on shore and left behind, but no others of the crew were affected. Another steamer, the "Lancaster," from Antwerp, had cases of suspicious Diarrhoea during the voyage, but they recovered.

We have no *passenger* ships arriving at this port, though cargo vessels arrive from all parts and there is a regular line of steamers trading from here to Hamburg. I have a special agreement with the owners and captains of these steamers that all drinking water is to be taken on board here—enough for the voyage; and the crew take all their provisions with them, so that no water nor food is taken on board at Hamburg, and no sailor is allowed to go ashore there. I believe this agreement is strictly kept by them.

All ships are inspected at Sharpness, in the tidal basin, before they are allowed to enter the Docks, and all drinking and bilgewater pumped out at the same time. No ballast other than water is allowed to be discharged at this Port. We have no means of *thorough* disinfection here, but we do all that can be done by the use of mercuric chloride and fumigation, and the crews of all vessels are carefully looked after while here. When they go to other British Ports from here, notice is given to the Authorities of such Ports, and the addresses of any of the crews of such vessels going to other inland places are sent to the Authorities.

I append to this Report a list of all vessels that arrived here during the year, with the *names* of vessels requiring special attention, and we shall now be able, with the aid of the second inspection, to give details of our examinations for future reports.

No infectious disease, other than Cholera, was found on board any of the ships.

I may remind the Authority that vessels arriving at Sharpness have no means of getting water other than from the canal, which water is of doubtful purity, and if it be possible to procure water

from some other source it ought to be done. Should Cholera be introduced and cases are treated here it would be very dangerous to use canal water, even though it is taken some miles above Sharpness Docks.

I am, Mr. Chairman and Gentlemen,

Yours faithfully,

JOHN CAMPBELL, M.D.,

Port Medical Officer of Health.

VESSELS ARRIVING FROM CHOLERA-INFECTED PORTS
SPECIALLY INSPECTED AT SHARPNESS IN 1892.

August	27	...	S.S. "Clio" from Hamburg, for Gloucester	
"	29	...	Three-mast Schooner "Lille" from Rouen, for Gloucester	
Sept.	6	...	S.S. "Croesus" from Ljuone, for Sharpness	
"	"	..	"Juan" from Novoriseisk,	"
"	7	..	"Trelawny" from Odessa,	"
"	"	...	"Provincia" from Alexandria,	"
"	8	..	"Hero" from Hamburg, for Gloucester	
"	18	...	"Pencalenick" from Taganrog for Sharpness	
"	20	...	"Isle of France" from Yeisk,	"
"	21	...	"West Stanley" from White Sea,	"
"	22	...	"Nicholas Vagliano" from Marianople, for Sharpness	
"	"	...	"John Morrisson" from Taganrog, for Sharpness	
"	24	...	"Caimryan" from Yeisk, for Sharpness	
"	25	...	Barque "Vera" from Danzig, for Gloucester	
"	27	...	S.S. "Clio" from Hamburg,	"
October	4	...	"Penwith" from Yeisk, for Sharpness	
"	6	...	"Cumbrian" from Kemi,	"
"	7	...	"Glenmanna" from Rafso, for Gloucester	
"	"	...	"Wordsworth" from Odessa, for Sharpness	
"	11	..	"Dundonald" from Utoik, for Gloucester	
"	"	...	"Lydié" from Taganrog, for Sharpness	
"	12	...	"Vesta" from Cronstadt,	"
"	14	...	"Hero" from Hamburg, for Gloucester	
"	16	...	"Bris" from Simo, for Sharpness	
"	17	...	"Lizzie" from Hudiksvall, for Gloucester	
"	20	...	"Rovigo" from Gefle, for Gloucester	
"	"	...	"Triton" from Kramfors,	"
"	22	...	"Newbridge" from Gefle and Skutskar, for Gloucester	
Nov.	1	...	"Clio" from Hamburg and Rotterdam,	"
"	"	...	"Lundy" from Taganrog, for Sharpness	
"	"	...	"Runo" from Holmsund,	"
"	2	...	"Brookfield" from Obo & Rafso,	"
"	"	...	"Naworth Castle" from Novoriesisk, for Sharpness	
"	3	...	"Liffey" from Stugsund, for Sharpness	
"	5	...	"John Adamson" from Alexandria, for Sharpness	
"	6	...	"William Adamson" from Sulina,	"
"	9	...	"Clio" from Hamburg, for Gloucester	
"	13	...	"Hero" " "	"
"	22	...	"Lancaster" from Rotterdam, for Gloucester	
"	24	...	"Clio" from Hamburg, for Gloucester	

Dec.	1	...	"	" Hilda " from Taganrog, for Sharpness
"	"	...	"	" Meggie " from Ghenitchesk "
"	7	...	"	" Widdington " from Alexandria "
"	8	...	"	" Watington " from Sulina, "
"	9	...	"	" Hero " from Hamburg, for Gloucester
"	13	...	"	" E.S. Lancaster " from Antwerp, "
"	24	...	"	" Clio " from Hamburg, "

NUMBER OF VESSELS ARRIVED FROM FOREIGN PORTS
DURING THE YEAR 1892.

	SAIL.	STEAM.	
January	66	...	11
February	2	...	12
March	10	...	5
April	12	...	8
May	9	..	6
June	12	...	18
July	21	...	22
August	29	...	15
September	19	...	21
October	9	...	14
November	22	...	16
December	10	...	9
	<u>221</u>	<u>157</u>	<u>= 378</u>